

FIBER AMPLIFIER SYSTEM FOR PRODUCING VISIBLE LIGHT

ABSTRACT OF THE DISCLOSURE

5 A light source is disclosed having a pulsed laser, a fiber amplifier optically coupled to the pulsed laser, and a nonlinear frequency converting element optically coupled to the fiber amplifier. The pulsed laser, e.g., a passively Q-switched laser, is configured to generate light pulses characterized by a pulse length of less than about 1.7 nsec and sufficiently large that a frequency bandwidth of the pulses after they emerge from the fiber amplifier is less than an acceptance bandwidth of the nonlinear frequency converting element. The laser is pulsed at a
10 pulse repetition rate sufficiently large that the fiber amplifier does not spontaneously emit radiation between pulses. In such a source, the fiber amplifier is substantially free of stimulated Brillouin scattering and self-phase modulation may be held to a level that does not reduce conversion of infrared radiation to visible radiation. Such a light source can be combined with an image generator and a scanner in an image projection system.

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